spring, a mass of the valve, and a mass of the armature, and damping coefficients of the valve opening spring, the armature, and the valve.

22. (amended) A method for actuating an intake valve disposed in a cylinder head of an internal combustion engine by an electromagnetic valve apparatus having a valve closing electromagnet capable of exhibiting an electromagnetic force for attracting the armature to close the valve, a valve opening electromagnet capable of exhibiting an electromagnetic force for attracting the armature to open the valve, a valve opening spring for biasing the armature in a direction to open the valve, a valve closing spring for biasing the armature in a direction to close the valve, comprising the steps of:

actuating the valve according to a first mode when a first set of engine operating conditions are detected, said first mode further comprises the steps of de-energizing the valve closing electromagnet; maintaining the valve closing electromagnet in said de-energized state for a first predetermined time enabling the valve to oscillate by force of the valve opening spring and the valve closing spring; and energizing the valve closing electromagnet after said first predetermined time to close the valve; and

actuating the valve according to a second mode when a second set of engine operating conditions are detected, said second mode further comprises the steps of de-energizing the valve closing electromagnet to allow the valve to open, energizing the valve opening electromagnet in response to said de-energizing step to attract the armature to the valve opening electromagnet thereby causing the valve to open; de-energizing the opening electromagnet after a second predetermined time has elapsed since the valve opening electromagnet has been energized; and energizing the valve closing electromagnet in response to said de-energizing step of the valve opening electromagnet to attract the armature to the valve closing electromagnet thereby causing the valve to close.

REMARKS

I. Introduction.

Applicants would like to thank the Examiner for his careful examination of the present application. Applicants have amended claims 7 and 22. Claims 1-32 are presently pending in the application. Applicants submit that no new matter has been